



Relation between motivation and entrepreneurial competencies in female entrepreneurs

Relación entre la motivación y las competencias emprendedoras en empresarias

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Abstract

Motivation and entrepreneurial competencies can be perceived as interrelated. Individuals apply their most proficient skills to establish and sustain entrepreneurial ventures. This study presents findings derived from the participation of 212 female entrepreneurs from Tabasco, Mexico. The instrument used gauged their entrepreneurial motivations and competencies, building upon this premise. The research identified prioritization as the primary entrepreneurial competency and autonomy as the principal motivator for engaging in entrepreneurship. Furthermore, a structural equation model was employed, which observed a positive correlation between both variables, although it did not attain statistical significance. Additionally, economic security was not found to be a significant factor in explaining the motivation construct within this specific population. Hence, the study proposes the necessity for future investigations to propose constructs that center on women and their involvement in entrepreneurship, considering their distinct and contextual characteristics, to further enrich the field of study.

JEL Code: B54, L26, J16, C39, M19

Keywords: motivation for entrepreneurship; entrepreneurial competencies; female entrepreneurship; women entrepreneurs; structural equation modeling

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Resumen

La motivación y las competencias empresariales pueden considerarse relacionadas, ya que un individuo buscará poner en práctica sus mejores habilidades para desarrollar y sostener un emprendimiento. Con base en lo anterior, se presentan los resultados de un estudio en el que participaron 212 mujeres emprendedoras de Tabasco, México, utilizando un instrumento para medir sus motivaciones y competencias emprendedoras. Donde se identificó la priorización como principal competencia emprendedora y la búsqueda de autonomía como principal motivador para emprender. Además, por medio de un modelo de ecuaciones estructurales, se identificó que existe una relación positiva entre ambas variables, aunque ésta no es significativa. También se identificó que la seguridad económica no es un factor que explique el constructo de motivación para esta población. Ante esto, se propone el desarrollo de investigaciones que propongan constructos enfocados en las mujeres y su participación empresarial, considerando sus características particulares y contextuales.

Código JEL: B54, L26, J16, C39, M19

Palabras clave: motivación para emprender; competencias emprendedoras; emprendimiento femenino; mujeres empresarias; modelación de ecuaciones estructurales

Introduction

International organizations such as the United Nations (UN), the Economic Commission for Latin America and the Caribbean (ECLAC), and the International Labor Organization (ILO) mention that women's participation in the labor market, whether as employees or in charge of a business, is necessary to boost the economy of a country or region, and although it has been pointed out that their integration should be seen as positive for economic development and the reduction of poverty rates in nations, the reality that women face when they decide to participate economically is limited by a series of factors linked, in many ways, to the patriarchal order and gender roles established by society itself. Transferring these established roles to the participants in society, women have been attributed a reproductive role, and men have a productive one. Nevertheless, this role is disturbed when women decide to be part of the labor market, generating a stigma about what they should be doing and trying to do (Chant & Pedwell, 2008; Araya, 2017).

The barrier of patriarchal structures limits women's autonomy, relegating them to the home instead of work and generating a "gender gap" that affects their access to jobs and precarious working conditions (Elizundia, 2015; Instituto Nacional de las Mujeres, 2016). Despite these challenges, many women choose entrepreneurship for economic independence and personal development. This motivation may arise from their precarious employment, professional or family situation, or an intrinsic desire for personal growth and achievement (Santander-Astorga et al., 2016). Although theory suggests that

economic independence is a motivating factor for entrepreneurship (Aguilar et al., 2014), women face and overcome these barriers in search of financial autonomy and personal fulfillment.

Research on women's role in entrepreneurship and their participation as entrepreneurs is scarce and limited due to the lack of updated statistical data and appropriate methodological approaches. Studies such as Selamat et al. (2020), Ozsungur (2019), Paredes et al. (2019), Lupsa-Tataru (2018), Ghani (2017), and Blasco-Burriel et al. (2016) have pointed out these limitations, making it difficult to accurately identify women participants and their contribution to the entrepreneurial economy.

In the context of the state of Tabasco, where this research is being conducted, it is relevant to note that women own 32.41% of MSME-type establishments, a figure that is below the national mean of 36.56% (INEGI, 2019; Spanish: Instituto Nacional de Estadística y Geografía). This highlights the importance of studying the entrepreneurial characteristics of women in this region and understanding how their entrepreneurial motivations and competencies can influence their economic and business participation. The previous qualitative study by Aguilar et al. (2014) on the management of small-scale female manufacturing entrepreneurs has opened a valuable line of research to deepen in the Tabasco context, where studies have been more limited. By understanding the dynamics and elements that drive female entrepreneurship in this geographic area, it will be possible to offer a more complete and meaningful view of their participation in the local economy and their role as entrepreneurs. For these reasons and to contribute to the generation of knowledge on the subject, this research is guided by the following objectives:

- To identify the factors present in the entrepreneurial motivation of women in Tabasco.
- To identify the entrepreneurial competencies possessed by female entrepreneurs in Tabasco.
- To identify the existence of a relation between entrepreneurial motivation and competencies in Tabascan women.

This research is relevant as it is one of the first studies with a larger number of participants in Tabasco, contributing to identifying key elements related to motivation and entrepreneurial competencies in women. In addition, it serves as a starting point for future research and proposals to strengthen the entrepreneurial spirit of women in the economy. This attempt to carry out a theoretical model that analyzes the relation between motivation and entrepreneurial competencies in women will be a valuable resource to understand their entrepreneurial behavior and contribute to women's economic growth through entrepreneurship.

Theoretical basis

The entrepreneur plays a crucial role in society, driving innovative initiatives that improve the economic system. Their ability to detect changes and take advantage of new opportunities, together with their exploratory and creative spirit, make them an indispensable agent in various aspects of social development; where their competencies allow them to face the challenges associated with entrepreneurial projects, providing technical, economic, and mental resources to achieve its success, which is also known as entrepreneurial competencies (Alda-Varas et al., 2012; Vale et al., 2008; Cantón et al., 2014; Vinocur & Kuchevasky, 2010).

Entrepreneurial competencies

According to McClelland (1973), competencies are related to people's intrinsic motivations and needs, which lead them to develop certain skills to achieve their goals in different areas of their lives. In this study, the focus is on competencies related to entrepreneurship since it has been shown that entrepreneurial competencies have a meaningful impact on entrepreneurial success. These competencies are practical skills, values, and measures that influence companies' creation, development, and consolidation (Kyndt & Baert, 2015; Martínez & Carmona, 2009).

For Man et al. (2008), the classification of competencies to understand entrepreneurial behavior includes six areas: opportunistic, organizational, strategic, social, commitment, and conceptual competencies, offering a complete view of the skills necessary for success in entrepreneurship. Meanwhile, Toril and Valenciano (2011) conducted studies that identified a series of characteristics that entrepreneurs acquire or develop, including ambition, positive mental aptitude, creativity, effort, initiative, tenacity, vision of the future, negotiating and commercial attitude, decisiveness, leadership, planning, and social skills. These qualities are fundamental for developing and growing a successful venture, as they allow one to face challenges and take advantage of opportunities effectively.

Plumly et al. (2008) found that entrepreneurship potential in university students is related to competencies such as analytical skills and business intelligence for problem-solving and decision-making. On the other hand, Nwachukwu and Minh (2021) emphasize that entrepreneurial competencies include the entrepreneurs' skills, determined by their personality, social role, knowledge, self-perception, and motivations for entrepreneurship. Palacios (1999) identified several fundamental competencies for business development, such as the need for existence, previous technical experience, entrepreneurial spirit, hard work, ability to recover and learn, risk tolerance, credibility, family culture, entrepreneurial

professionalism, and a tolerant society. These characteristics have been taken up in subsequent research, such as that of Barroso et al. (2014) for the Mexican Southeast and Mandujano (2017) for the context of the state of Tabasco.

H1. The “ability to work with others” is positively and significantly related to the latent variable “entrepreneurial competencies” in Tabascan women.

Motivation for entrepreneurship

To understand what leads a person to start a business, the motives that drive them to form a company must be recognized (Mahto & McDowell, 2018). Therefore, the theory on the motivation for entrepreneurship has been conceived based on factors contributing to entrepreneurship. Entrepreneurship responds to motives of personal interest or need, being a dynamizing device of the economy, allowing the creation of jobs as the generation of wealth through the development of companies (Sastre, 2013; Murnieks et al., 2020). Understanding the motives behind entrepreneurship is of great interest, separating its conception from motivation focused on organizational behavior (López et al., 2016).

Women start a business for various reasons, including seeking freedom and control in their decisions, obtaining economic benefits, achieving personal goals, improving social status, and the possibility of having a job (Ramadani, 2015). They are also driven by the pursuit of individual achievement, competition, independence, affiliation, the desire to obtain power as an innovative element, willingness to face risks, and a proactive spirit (Barba-Sánchez & Atienza-Sahuquillo, 2012; Rahmatullah & Zaman, 2014). In addition, some women start a business in response to an adverse environment, such as financial difficulties, continuity of family businesses, lack of flexibility and control over their time, personal dissatisfaction, unemployment, or as a recreational option due to limitations in socialization (Rahmatullah & Zaman, 2014).

Thus, the motivations for business entrepreneurship in women can be classified into pull factors, related to the search for freedom, high income, and growth opportunities; push factors, linked to complex aspects such as migration or job loss; balance factors, associated with flexible schedules and work-family balance; and emotional factors, such as commitment and discrimination, considering that women start businesses to seek financial security due to precarious conditions, and are also motivated by psychosocial factors such as a sense of achievement and prestige (Ozsungur, 2019; Selamat et al., 2020; Avcı & Gümüş, 2022). Nevertheless, from comparative studies between men and women in Mexico, four major dimensions could also be identified as the principal reasons for starting a business: intrinsic factors, search for autonomy, economic security, and income generation (López et al., 2016). Thus, the following hypothesis is proposed:

H2. The “Search for autonomy” is positively and significantly related to the latent variable “Motivation for entrepreneurship” in Tabascan female entrepreneurs.

Thus, in this research, entrepreneurial competencies are considered the characteristics that define the entrepreneur's behavior and contribute to the development of their entrepreneurship (Aldavaras et al., 2012). They are closely related to the individual's motivation and self-perception, which influences their entrepreneurial personality and identity in their social environment (Mahto & McDowell, 2018). People's internal capabilities improve their entrepreneurial development and chances of success when coupled with the motivation to have their own business (Paredes, 2019). Motivation and entrepreneurial competencies lead individuals to carry out and sustain their entrepreneurship based on their personal goals, such as family culture or the desire to have a business (Rahmatullah & Zaman, 2014; Lopez et al., 2016). Ultimately, the reason for entrepreneurship and making business their way of life and livelihood will determine the implementation of these competencies and motivations.

The theoretical model proposed for this research integrates the four motivational factors behind entrepreneurship, as proposed by López et al. (2016) in the Mexican context. Additionally, to identify the entrepreneurial competencies, the methodology proposed by Palacios (1999) was selected, which was replicated and validated by Santos (2011) in a study in Yucatan and by Mandujano (2016) in another study on entrepreneurial competencies in Tabasco (see Figure 1), given the relevance of the geographical context where this study was carried out, allowing an approach to the identification of both characteristics in female entrepreneurs in a relevant manner and according to the local reality, based on which the following hypothesis was proposed:

H3. Motivation is positively and significantly related to entrepreneurial competencies in Tabascan female entrepreneurs.

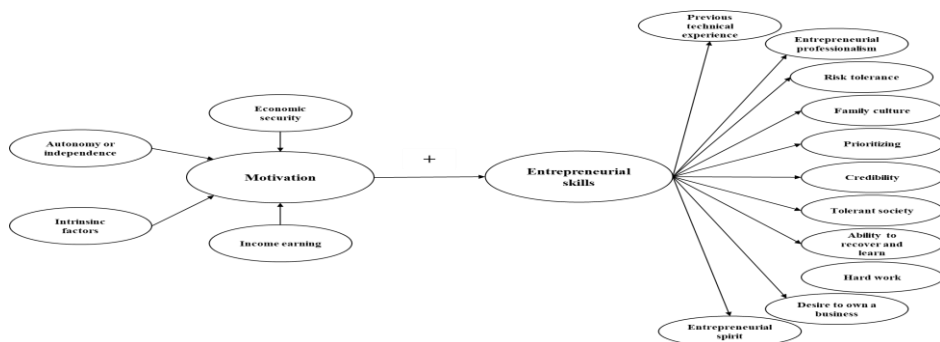


Figure 1. Proposed theoretical model of the relation between entrepreneurial competencies and motivation

Source: created by the authors based on the entrepreneurial competencies of Palacios (1999) and the motivation for entrepreneurship of López et al. (2016)

Methodology description

This research focused on identifying entrepreneurial motivation and competencies in women with their own businesses in Tabasco. The sample consisted of 212 female entrepreneurs who met certain inclusion criteria, such as being women and having businesses in operation for at least six months. Due to the lack of official records on businesses owned by women, a non-probabilistic approach and a snowball technique were used to select participants. Although the sample does not ensure representativeness, the study provided an approach to the phenomenon (Bernal, 2010). Nevertheless, difficulties were faced in the access and participation of women entrepreneurs due to doubts, insecurity, and disinterest in collaborating. The demographic characteristics of the participants and their businesses can be seen in Table 1 and Table 2, respectively.

Table 1
Main demographic characteristics of the participants

Characteristics	f	%
Age: Between 26 and 30 years old	63	29.7
Marital status: Married	79	37.3
Education level: High school	79	37.3
Economic dependents: One person (excluding self)	76	35.8
Type of economic dependent: Child	89	42

Source: created by the authors

Table 2
Main characteristics of the participants' businesses

Characteristics	f	%
Line of business: Apparel, footwear, and accessories	62	29.2
Age of business: Between 6 months and 1 year of operations	60	28.3
Number of employees: None	154	72.6
Main reason for entrepreneurship: Intention to own a business	71	33.5
Affiliation with Chambers or Trade Associations: None	209	98.6

Source: created by the authors

Instruments

The study used two instruments for data collection. The first, designed by Santos (2011), was based on the entrepreneurial competencies proposed by Palacios (1999). It comprised 57 items distributed in eleven dimensions (see Table 3). The second instrument, created by López et al. (2016), focused on measuring entrepreneurial motivation and consisted of 18 items distributed in four dimensions (see Table 4). Both instruments were authorized by their respective authors for use in this research. They were selected because of their relevance in previous national, regional, and local studies similar to the present study. In

this way, it was possible to verify their suitability and applicability in the field of gender in entrepreneurship.

The final instrument was divided into three sections. The first collected demographic data and business characteristics. The second contained items to identify motivations for entrepreneurship (Table 3), while the third included items related to entrepreneurial competencies (Table 4). The items in sections two and three were evaluated using a Likert scale, where participants expressed their perception, from “strongly disagree” (1) to “strongly agree” (5) of the proposed statements. The final instrument consisted of 75 items.

Table 3
Operationalization of the Entrepreneurial Competencies Construct

Dimensions	Conceptual definition	Item	Scale
Entrepreneurial spirit	Characteristics include the intuition to identify business opportunities, the persistence to carry out an idea even in difficult situations, and the determination to overcome obstacles.	CEEE1 to CEEE5	Ordinal
Need for Existence	It involves feeling a strong motivation and commitment to carry out the venture. This concept includes a willingness to sacrifice immediate gains in favor of long-run goals.	CENE6 to CENE8	Ordinal
Previous technical experience	It relates to in-depth knowledge of the business, processes, and product. To achieve entrepreneurial success, the person must be involved in the business for a considerable period.	CEETP9 to CEETP14	Ordinal
Risk tolerance	Ability to face calculated risks, i.e., to make risky decisions based on a previous analysis or plan.	CETR15 to CETR19	Ordinal
Hard work	It involves being willing to devote considerable effort and many hours of work, even without immediate rewards.	CETA20 to CETA25	Ordinal
Ability to recover and learn	It implies tenacity and perseverance. Not letting oneself be defeated by failure and learning from mistakes to improve and grow.	CECRA26 to CECRA29	Ordinal
Ability to work with others	It refers to establishing harmonious relations with partners and collaborators, selecting the right people, and working cooperatively in a team.	CECTO30 to CECTO34	Ordinal
Credibility	It is related to the supply of quality products and services, customer respect, and employee appreciation. It implies acting with integrity and following ethical principles.	CEC35 to CEC39	Ordinal
Prioritizing	It involves having the ability to establish priorities and to deliver on them effectively.	CEP40 to CEP44	Ordinal
Family and business	It involves properly managing family relations, incorporating professional management, and preparing for succession in the company.	CEFYN45 to CEFYN49	Ordinal
Entrepreneurial professionalism	Ability to carry out internal skills and capabilities, as well as strategies necessary to ensure the survival and successful growth of the company. This concept includes adaptability, continuous learning, and constant improvement.	CEPE50 to CEPE55	Ordinal

Source: created by the authors based on the dimensions of entrepreneurial competencies adapted by Santos (2011) from Palacios (1999)

Table 4
 Operationalization of the construct Motivation for Entrepreneurship

Dimensions	Conceptual definition	Items	Scale
Income earning	Reasons to seek a better quality of life, the growth of the business, and the generation of income through one's own efforts	MEOI56 to MEOI60	Ordinal
Intrinsic aspects	Motives related to the perception of achievement and public recognition, which in turn generates greater personal satisfaction in the entrepreneurial process.	MEFI61 to MEFI64	Ordinal
Search for Autonomy	Make decisions freely and autonomously, allowing without compromising personal relations.	MEBA65 to MEBA69	Ordinal
Economic Security	Entrepreneurship as a way to prepare for a better retirement, achieve job stability, or leave a legacy for one's future.	MESE70 to MESE73	Ordinal

Source: created by the authors based on the factors identified in the motivation by López *et al.* (2016)

Instrument validation

In order to ensure the criterion and content validity of the instrument, an expert judgment was made with the participation of three specialists in the area of study, specifically in entrepreneurship, with a gender-based approach. These experts evaluated the coherence, relevance, sufficiency, and clarity of each item of the instrument using a scale of 1 to 4, where 1 meant that the item did not meet the criterion and 4 indicated a high level of compliance (Escobar-Pérez & Cuervo-Martínez, 2008). The Fleiss Kappa concordance index was used to calculate the concordance among experts, obtaining a moderate concordance (0.426) according to the Landis and Koch (1977) scale. Based on the experts' ratings and recommendations, changes were made to the wording of some items to make them more appropriate for the study population and the context in which the instrument would be applied.

For construct validation, exploratory factor analysis (EFA) was performed using the maximum likelihood extraction method with varimax rotation and Kaiser normalization. Nevertheless, before its use, the sample adequacy measures were calculated through the Kaiser Meyer Olkin index (KMO) and Bartlett's Test of Sphericity, obtaining the values presented in Table 5 for each construct. In addition, it was verified that the correlation matrix was adequate to perform the factorization of the constructs since the values were not typical of an identity matrix (Moral, 2011).

For the Motivation construct, four factors were identified that explained 51.482% of the variance, in line with the findings of López *et al.* (2016). As for the Entrepreneurial Competencies construct, 11 factors were found that explained 58.424% of the variance, in line with what was proposed by Palacios (1999).

Table 5
 KMO and test of sphericity of constructs for factorization

Construct	KMO	Bartlett's Test of Sphericity
Motivation	0.813	$X^2=1\ 585.310$, $gl=153$, $p\leq .000$
Entrepreneurial Competencies	0.876	$X^2=8\ 396.281$, $fl=1\ 596$, $p\leq .000$

Source: created by the authors

Instrument reliability

In order to establish the instrument's reliability, a pilot test was conducted with the participation of 37 women who possessed the same characteristics as the study population. The instrument was self-administered through the Google Forms platform as a form, shared through instant messaging platforms and e-mail. In order to verify its internal consistency, Cronbach's alpha and McDonald's Omega coefficients were calculated for each variable and its dimensions (see Table 6). According to the criteria of Oviedo and Campo-Arias (2005), those that ≥ 0.70 are acceptable.

Table 6
 Cronbach's Alpha by variables and dimensions

Element	alpha	Omega
Variable Entrepreneurial competencies	0.950	0.936
Entrepreneurial Spirit	0.774	0.771
Need for Existence	0.630	0.611
Previous technical experience	0.820	0.850
Risk tolerance	0.863	0.844
Hard work	0.638	0.628
Ability to recover and learn	0.732	0.783
Ability to work with others	0.705	0.764
Credibility	0.718	0.927
Prioritizing	0.856	0.876
Family and business	0.695	0.707
Entrepreneurial professionalism	0.766	0.790
Motivation Variable	0.802	0.716
Income Earning	0.833	0.714
Intrinsic factors	0.489	0.685
Search for autonomy	0.763	0.764
Economic security	0.731	0.796

Source: created by the authors

The results showed that both variables presented internal consistency above the acceptable value. Specifically, entrepreneurial competencies had reliability values >0.90 , while motivation had values $>0.80/0.70$. When analyzing the dimensions of each variable, it was observed that some obtained lower alpha and omega values, such as the dimension "Need for existence" in entrepreneurial

competencies (0.630/0.611) and the dimension “Intrinsic factors” in motivation (0.489/0.685). Nonetheless, modifications were made to the wording of the items based on expert observations, maintaining the original meaning given by the authors for each item.

Data collection and analysis procedure

SPSS v25 statistical software was used to calculate central tendency and dispersion measures, determine normality, and obtain descriptive data. The constructs’ reliability, criterion, content validity analyses, item correlation analyses, and factor loadings were also carried out through Exploratory Factor Analysis (EFA). Using the AMOS v23 program, bivariate analyses were carried out using structural equations to establish the relation between the motivation and entrepreneurial competencies constructs. The theoretical model was generated using goodness of fit indicators, and the proposed hypotheses were answered.

Results

Construct validity analysis by CFA

Data were processed using structural equation modeling. Eighteen factors correlated by maximum likelihood were used to measure the two constructs under study: motivation (with four factors) and entrepreneurial competencies (with eleven factors). Each construct’s goodness of fit indices were analyzed to prove their convergent and discriminant validity. It was identified that the goodness of fit indices were not valid for the study population since they showed Qi-square significance values of .000, which was not acceptable according to the authors’ original proposal.

Several goodness-of-fit criteria were used for models under structural equations. Discrepancy indices (CMIN/DF), root mean square errors of approximation (RMSEA), corrected goodness of fit indices (GFI), comparative fit indices (CFI), and root mean square residual (RMR) for each construct were analyzed. Table 7 presents the estimated baseline values for determining the parsimony of the SEM model.

Table 7
Estimated fit values for a structural equation model (SEM)

Index	Expected Criterion
Discrepancy between X^2 and degrees of freedom (CMIN/DF)	<5
Goodness of fit index (GFI)	0.90 - 1
Root mean square residual (RMR) index	Closest to 0
Root mean square error of approximation (RMSEA)	<0.05 / 0.080
Comparative Fit Index (CFI)	0.90 - 1

Source: created by the authors based on criteria for goodness of fit parsimony of models by Bentler (1990), Browne and Cudek (1993), Lévy and Varela (2008), Padilla (2019)

Motivational construct

In the construct “Motivation,” which initially consisted of 18 items, to achieve a satisfactory goodness of fit, 5 items identified as MEOI57 (Revenue), MEFI61 (Intrinsic Factors), MEBA67 and MEBA68 (Search for Autonomy), and MESE72 (Economic Security) were eliminated. Thus, only 13 items were used to explain the construct (see Figure 2). These values indicate that the model fits adequately when analyzing constructs that measure skills and attitudes in the social sciences (Padilla, 2019). Despite eliminating the items mentioned, the theory proposed by López *et al.* (2016) is still consistent with this population’s data obtained in this study.

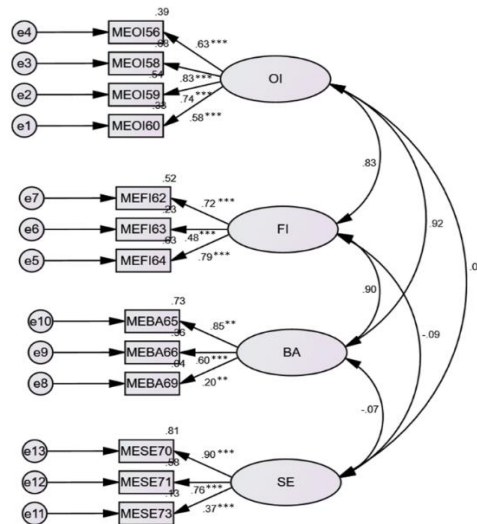


Figure 2. Standardized coefficients to measure the motivational construct

Note 1: Discrepancy ratio of 1.190; RMR=0.043, CFI=0.938, GFI=0.925, and RMSEA=0.069.

*p<.05, **<.01, ***<.001

Note 2: OI=Obtaining Income, FI=Intrinsic Factors, BA=Search for Autonomy, SE=Economic Security

Source: created by the authors in the AMOS program based on the data obtained

Entrepreneurial competencies construct

For the Entrepreneurial Competencies construct, 57 items were integrated. Nevertheless, 24 of these items had to be eliminated to achieve the model's goodness of fit. These items were called CEE2 and CEE5 for Entrepreneurial Spirit, CENE8 for Need for Existence, CEETP11, CEETP12, and CEETP14 for Prior Technical Experience, CETR17 and CETR19 for Risk Tolerance, CETA20, CETA21, and CETA23 for Hard Work, CECRA27 for Ability to Recover and Learn, CECTO30 and CECTO34 for Ability to Work with Others, CEC35 and CEC39 for Credibility, CEP42 and CEP43 for Priority, CEFYN45, CEFYN46, and CEFYN49 for Family and Business, and CEPE52, CEPE53, and CEPE54 for Entrepreneurial Professionalism. This resulted in 33 items to explain the construct.

Strong correlations were identified between the CENE6 and CENE7 “Need to Exist” items and between the CETR15 and CETR16 “Risk Tolerance” items. In order to address these correlations, contractions of the relevant items were performed. Since the 11 dimensions of Palacios (1999) were maintained, it was possible to determine that the theory agrees with this study's data, as shown in Figure 3. Nevertheless, not all items were necessary for this study population to explain each variable dimension.

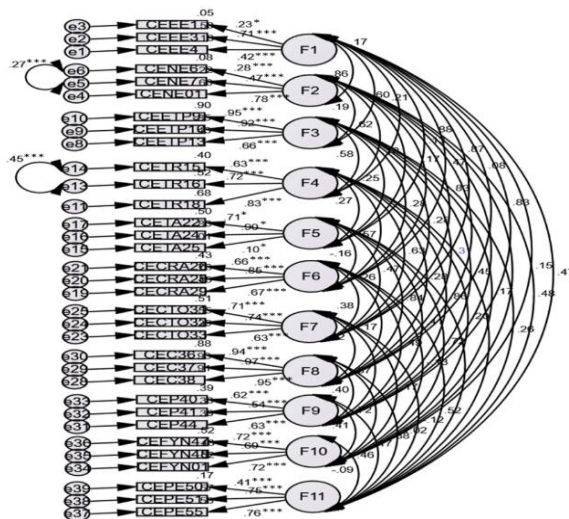


Figure 3. Standardized coefficients to measure the Entrepreneurial Competencies construct
 Note 1: Discrepancy ratio of 1.955 and RMR=108, CFI=0.888, GFI=0.803 and RMSEA=0.067. * $p < .05$, ** $p < .01$, *** $p < .001$

Note 2: F1=Entrepreneurial spirit, F2=Need for existence, F3=Previous technical experience, F4=Risk tolerance, F5=Hard work, F6=Ability to recover and learn, F7=Ability to work with others, F8=Credibility, F9=Prioritize, F10=Family and business, F11= Professionalization of the entrepreneur

Source: created by the authors in the AMOS program based on the data obtained

Hypothesis testing

Based on the models generated through the structural equations for each construct, the interaction between the values was performed (see Table 8) to respond to the hypotheses according to the theoretical model proposed through the SEM model (see Figure 4). According to Escobedo *et al.* (2016), to determine whether a group of factors has a meaningful effect on another, the value must be >0.5 .

Table 8
 Relation between latent variables. Values results of the SEM Model

Variable		Variable	CF	p
Motivation for entrepreneurship	<---	Entrepreneurial Competencies	0.48	***
Dimension		Variable	CF	p
Income Earning	<---	Motivation	0.91	*
Intrinsic factors	<---	Motivation	0.91	***
Search for autonomy	<---	Motivation	1.00	**
Economic security	<---	Motivation	-0.03	*
Entrepreneurial spirit	<---	Entrepreneurial Competencies	0.88	***
Need for Existence	<---	Entrepreneurial Competencies	0.95	***
Previous technical experience	<---	Entrepreneurial Competencies	0.46	***
Risk tolerance	<---	Entrepreneurial Competencies	0.83	***
Hard work	<---	Entrepreneurial Competencies	0.28	***
Recovering and learning	<---	Entrepreneurial Competencies	0.73	***
Working with others	<---	Entrepreneurial Competencies	0.8	***
Credibility	<---	Entrepreneurial Competencies	0.22	***
Prioritizing	<---	Entrepreneurial Competencies	0.96	***
Family and business	<---	Entrepreneurial Competencies	0.23	***
Entrepreneurial professionalism	<---	Entrepreneurial Competencies	0.74	*

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Source: created by the authors based on data processed through the AMOS program

The first hypothesis sought to determine if the “ability to work with others” was positively and significantly related to the latent variable “entrepreneurial competencies” in Tabascan women, where, employing SEM, a significant relation was identified ($p < 0.001$), although weaker than expected. While the hypothesis that there is a meaningful relation between both latent variables is supported, it is important to remember that the relation is weaker than expected ($CF = 0.22$) compared with other items for this construct.

The second hypothesis aimed to determine whether the “search for autonomy” is positively and meaningfully related to the latent variable “Motivation for entrepreneurship” in Tabascan women. It can be observed that the results obtained through the structural equation analysis provide solid evidence to affirm that the hypothesis has been fulfilled. The relation between the latent variable “Search for

autonomy” (CF = 1.00) and the latent variable “Motivation for entrepreneurship” showed a perfect and significant positive relation ($p < 0.001$), providing a solid basis to affirm that “Search for autonomy” is a well-measured construct and has a high influence on the entrepreneurial Tabascan women studied.

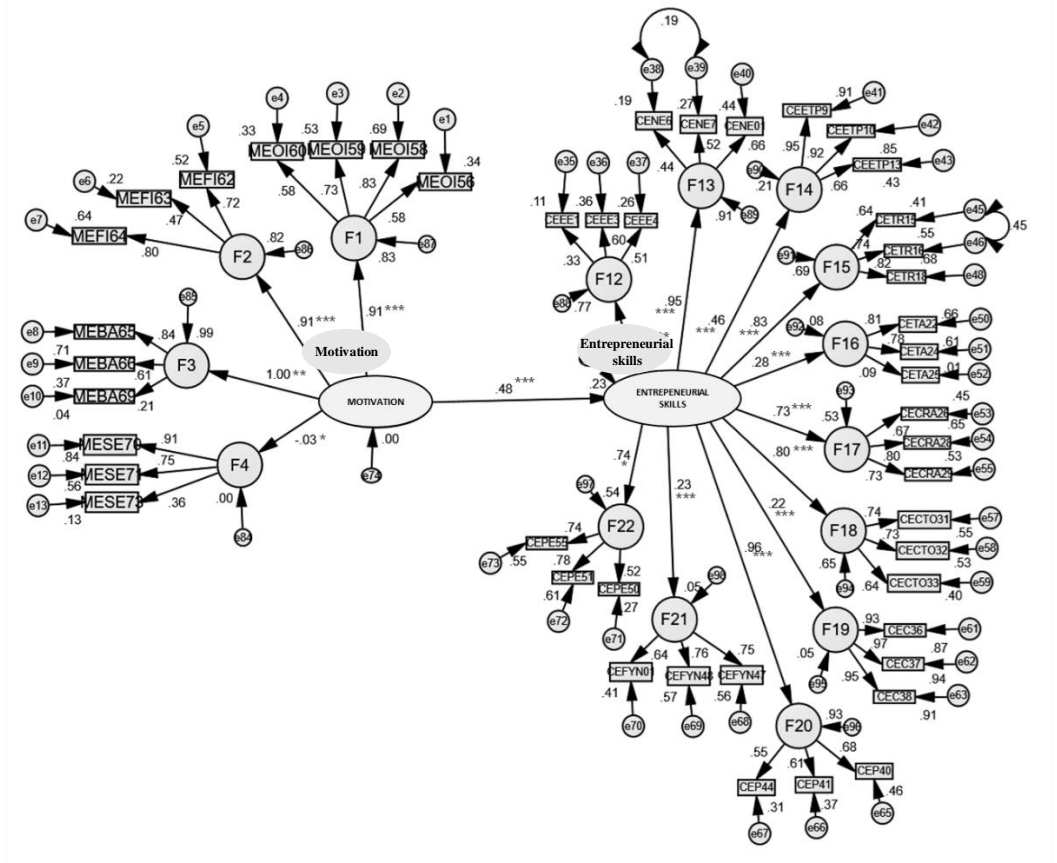


Figure 4. SEM model of the relation between motivation and entrepreneurial competencies in women
 Note 1: Relation of motivation and entrepreneurial competencies= 0.48. Discrepancy ratio= 2.315, RMSEA= 0.079, CFI=0.77, * $p < .05$, ** $p < .01$, *** $p < .001$

Note 2: F1=Income earning, F2=Intrinsic factors, F3=Search for autonomy, F4=Economic security. F12=Entrepreneurial spirit, F13=Need for existence, F14=Previous technical experience, F15=Risk tolerance, F16=Hard work, F17=Ability to recover and learn, F18=Ability to work with others, F19=Credibility, F20=Prioritization, F21=Family and business, F22=Professionalization of the entrepreneur.

Source: created by the authors in the AMOS program based on the data obtained

For the third hypothesis, it was found that there is a positive relation between the variable “Motivation for entrepreneurship” and the variable “Entrepreneurial competencies.” Although the association is moderate ($CF=0.48$), it indicates that as the level of motivation of Tabascan women to become entrepreneurs increases, their entrepreneurial competencies are expected to increase. Thus, the p -value < 0.001 reinforces confidence in the results, demonstrating that this relation is not simply the result of chance but is a statistically significant and valid finding. Consequently, the results support the hypothesis initially proposed, which implies that in entrepreneurial women from Tabasco, a greater motivation for entrepreneurship is positively and significantly associated with a higher level of entrepreneurial competencies.

Regarding the results obtained when analyzing the composition of each of the constructs of both variables, it was found that for Motivation, the Economic Security factor for this population reported a negative behavior ($CF=-0.03$, $p= >0.005$), indicating the existence of an extremely weak or non-existent relation with its observable indicators, and this relation is not statistically significant. Therefore, it is important to explore this lack of relation and its possible influence on the motives for entrepreneurship among women in this population.

Thus, it can be seen that there are motives that drive the entrepreneurial behavior of entrepreneurial women, as well as motivational factors that favor the development of entrepreneurship in women, such as the search for autonomy, internal factors, having support networks, interaction with the outside world, and feeling part of something, which is consistent with Weeks and Seiler (2001), Jawarna *et al.*, (2011), Berdugo and Gámez (2015), and Pérez-Pérez and Ávila-Hernández (2016). Regarding the analysis of the factors that can best explain the variable Entrepreneurial Competencies of Tabascan entrepreneurs, these were Prioritizing (1.00) and Need for Existence (0.93). On the other hand, the factors that least explained the variable were Credibility (0.22), Family and Business (0.23), and Hard Work (0.28). This result satisfies the minimum acceptable criteria indicated above.

Conclusions

Regarding the main objective of the research, a theoretical model was designed to identify the existence of the relation between motivation and entrepreneurial competencies of female Tabascan entrepreneurs (see Figure 4), which helped to determine that motivation has a positive relation with entrepreneurial competencies in women, which is consistent with Barba-Sánchez and Atienza-Sahuquillo (2012) and Mahto and McDowell (2018), who point out that motivation plays a crucial role in the decision to form any new business, and this, in turn, requires specific skills for its management. It is worth noting that although from the structural equation analysis it was identified that the relation is statistically meaningful,

its positivity is moderate and may be related to the participant's environment since the motives for entrepreneurship will vary according to the context in which the women work, as established in their studies by Rahmatullah and Zaman (2014), Moncayo and Zuluaga (2015), Ramadani (2015), and Selamat *et al.*, (2020).

According to the motivational characteristics entrepreneurship of the Tabascan female entrepreneurs, it was found that they can be mostly motivated by the search for autonomy, obtaining income, and intrinsic factors, coinciding with Ramadani (2015) and Ozsungur (2019), who point out that among the main motives for entrepreneurship presented by the participating women are the search for freedom, achieving something, and the opportunity to obtain economic benefits. Nevertheless, the Economic Security dimension reported a negative behavior (-.03) and is a factor that may not correctly explain the construct for this population, implying that it is a dimension that should be analyzed for the study of the motivation for entrepreneurship in women, as it may be of little relevance to the topic or little studied as a motivator for entrepreneurship in the context of the participants, as it contradicts the claim by Selamat *et al.* (2020) that women start their own businesses motivated by financial security.

In the analysis of the entrepreneurial competencies, it was found that among the factors that best explained this construct is the competency Prioritizing, coinciding with Palacios (1999), who stresses the importance of the entrepreneur knowing how to establish priorities and realize them fully; therefore, studies of greater scope could be undertaken on the priority that businesswomen give to their companies and the activities related to them. Meanwhile, the ability to work with others, a competency that was particularly analyzed, could be studied in depth within other factors, such as the entrepreneurial ecosystem in Tabasco, in order to obtain a complete view of this relation, as it may be related to the minimal interaction that the women who participated in the study have with subordinates or employees. A near totality of the sample reported not having employees (72.6%), which may result in a weak perception of themselves concerning their ability to collaborate.

Nevertheless, it is noteworthy that the factors representing Credibility, Family and Business, and Hard Work are the least prominent elements in explaining this construct, which invites reflection on how women may perceive their performance and the consideration of their entrepreneurship, whether as a legacy or as a means to exist beyond an opportunity to get ahead due to some complex event in their lives. These results can be useful for designing programs and policies that promote the development of entrepreneurial skills and favor the success of women entrepreneurs in the region.

Accordingly, this information establishes that there are criteria for the validation of the proposed hypotheses, which means that although the relation between the latent variables and their observable indicators is weak, this relation is statistically significant and is not due to chance, implying that although the relations are weak in some cases, the results suggest that there is a real association between the latent

variable and its observable indicators for this study population. Therefore, further research projects are required to identify the interaction between the constructs with populations with similar characteristics but in other contexts.

As a result, the information generated here contributes to the achievement of gender equity through academia since contributions of these characteristics favor the development of measures based on the real needs of this population, improving the opportunities for access and contribution of women to national development, and considering the design of empirical studies that allow for a deeper understanding of women's entrepreneurial behavior. Although theory points out some features about their participation in the economy, it is necessary to establish specific lines of research in larger samples and with the interaction of multiple variables to obtain information that will allow diagnoses to be made that will lead to programs to support entrepreneurship, based on aspects of influence and on the real needs of women, as well as on public policies that will allow their full development.

Therefore, it is suggested to generate lines of research based on new criteria to differentiate the entrepreneurial motives and competencies of women according to their sociodemographic characteristics, the conditions of the environment in which they participate, the differences in the development of entrepreneurship by age group, the influence of entrepreneurial figures in the family environment, the formal and informal schooling received, and the means of financing for business development to which they have access. Thus, the entrepreneurial behavior of women can be better explained by considering an overview of their participation, with which proposals can be made to strengthen it, both from academia and from public and private organizations whose purpose is to strengthen women's participation in the economy. This information can guide the design, development, and implementation of public policies that promote and favor the development of women under equal conditions.

Thus, this study's implications are both theoretical and practical for female entrepreneurship. At the theoretical level, the model enriches the understanding of how motivation is linked to the entrepreneurial competencies of women in Tabasco. This highlights the importance of considering the connection between psychological aspects and practical skills in this context. From a practical perspective, these findings can inspire training programs focusing on technical skills and fostering entrepreneurial motivation. Furthermore, they underline the importance of personalized counseling that responds to the unique motivations of each entrepreneur. This concept contributes to knowledge of women's entrepreneurship and provides concrete guidance for developing programs, policies, and strategies that foster women's equal and successful participation in entrepreneurship. The intersection between theoretical and practical implications offers an invaluable opportunity to shape a more equitable and empowering future for women entrepreneurs in the region.

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